

What is claimed is:

1 1. A system for communicating content to a plurality of
2 subscribers, the content carried by signals originating from a
3 plurality of content providers, the system for communicating
4 content comprising:

5 a plurality of receivers, each receiver for receiving
6 at least one of the content-containing signals transmitted by one
7 of the plurality of content providers;

8 means for digitizing the signals received from the
9 plurality of content providers, the digitizing means coupled to
10 the receiving means for receiving the signals;

11 means for compressing the digitized signals, the
12 compression means coupled to the digitizing means for receiving
13 the digitized signals;

14 a multiplexer coupled to the compression means for
15 multiplexing the digitized signals into at least one digital data
16 stream;

17 modulating means coupled to the multiplexer for
18 modulating the at least one multiplexed digital data stream;

19 RF upconverter means coupled to the multiplexing means
20 for channelizing the at least one multiplexed digital data stream
21 into the UHF frequency band;

22 an amplifier coupled to the RF upconverter means for
23 amplifying the at least one UHF multiplexed digital data stream;
24 and
25 an antenna coupled to the amplifier for transmitting
26 the at least one amplified UHF multiplexed digital data stream;
27 whereby an aggregation of programming sources may be
28 provided point-to-multipoint to a plurality of subscribers by way
29 of digital UHF broadcast.

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1 2. The communications system according to claim 1, wherein at
2 least one of the signals from the content providers is
3 transmitted via satellite and the at least one receiver includes
4 means for receiving signals transmitted via satellite.

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1 3. The communications system according to claim 2, wherein a
2 second of the plurality of received signals is provided via
3 cable, and at least one of the plurality of receivers is adapted
4 to receive cable transmissions.

1 4. The communications system according to claim 3, wherein a
2 third of the plurality of received signals is provided via
3 microwave transmission, and wherein at least one of the plurality
4 of receivers includes a receiver adapted to receive microwave
5 transmissions.

1 5. The communications system according to claim 4, wherein a
2 fourth of the plurality of received signals is transmitted
3 optically via optical fiber, and wherein at least one of the
4 plurality of receivers includes a receiver adapted to receive
5 optical transmissions.

1 6. The communications system according to claim 1, wherein the
2 received signal comprises video data, and wherein the at least
3 one compression means is adapted to compress the digitized signal
4 to a resolution of approximately 256 by 240 pixels.

1 7. A system for communicating with a plurality of subscribers,
2 the communication involving content carried by signals
3 originating from a plurality of content providers, at least one
4 of the plurality of subscribers having access to a
5 telecommunications system, the system for communication
6 comprising:

7 a program subsystem, including:

8 a. a plurality of receivers, each receiver for
9 receiving one of the plurality content-carrying signals;

10 b. processing means coupled to the plurality of
11 receivers and adapted for:

12 i. digitizing the signals from the plurality of
13 content providers;

14 ii. inserting desired information into the
15 digitized signals;
16 iii. compressing the digitized signals; and
17 iv. multiplexing the digitized signals into at
18 least one data stream;
19 c. means for modulating the at least one digital data
20 stream, the modulating means coupled to the processing means;
21 d. RF upconverter means coupled to the modulating
22 means for channelizing the at least one modulated digital data
23 stream into the UHF frequency band;
24 e. at least one amplifier coupled to the RF
25 upconverter means for amplifying the at least one modulated
26 digital signal;
27 f. at least one antenna coupled to the at least one
28 amplifier for transmitting the at least one amplified data
29 stream; and
30 a return path subsystem coupled to the program
31 subsystem and to the telecommunications system, the return path
32 subsystem including processing means adapted for receiving over
33 the telecommunications system communications from the subscribers
34 and communicating with the program subsystem information to be
35 inserted by the program subsystem into the received, digitized
36 signals;
37 whereby an aggregation of programming sources may be
38 provided point-to-multipoint to subscribers by way of digital UHF

39 broadcast, subscriber input regarding the broadcast can be
40 received, and program transmissions may be modified in response
41 to the subscriber input.

1 8. A system for communicating with a plurality of subscribers,
2 the communication involving content carried by signals
3 originating from a plurality of content providers, at least one
4 of the plurality of subscribers having access to a
5 telecommunications system, the system for communication
6 comprising:

7 a. a program subsystem, including:
8 i. a plurality of receivers, each receiver for
9 receiving one of the plurality content-carrying signals;
10 ii. processing means adapted for modifying the
11 received signals, the processing means coupled to the plurality
12 of receivers;

13 b. a transmission subsystem coupled to the program
14 subsystem and receiving from the program subsystem the received
15 signals, the transmission subsystem including:

16 i. means for digitizing the signals from the
17 plurality of content providers;
18 ii. means for compressing the digitized signals,
19 the compression means coupled to the digitizing means;

20 iii. a multiplexer, for multiplexing the digitized
21 signals into at least one data stream, the multiplexer coupled to
22 the compression means;

23 iv. means for modulating the at least one digital
24 data stream into the UHF frequency band, coupled to the
25 multiplexing means;

26 v. RF upconverter means coupled to the
27 modulating means for channelizing the at least one modulated
28 multiplexed digital data stream into the UHF frequency band;

29 vi. at least one amplifier coupled to the RF
30 upconverter means for amplifying the at least one modulated
31 digital data stream; and

32 vii. at least one antenna for transmitting the at
33 least one amplified, channelized, modulated, digital data stream;
34 and

35 c. a return path subsystem coupled to the program
36 subsystem and to the telecommunications system, including
37 processing means adapted for receiving over the
38 telecommunications system communications from the subscribers;

39 whereby an aggregation of programming sources may be
40 provided point-to-multipoint to subscribers by way of digital UHF
41 broadcast and subscriber input regarding the broadcast can be
42 taken into account by the communications system.

1 9. The communications system according to claim 8, wherein the
2 processing means of the return path subsystem is further adapted
3 to communicate with the program subsystem on receiving a
4 communication from a subscriber, and the processing means of the
5 program subsystem is further adapted to modify the received
6 signals on receiving a communication from the return path
7 subsystem, whereby the transmission may be modified in response
8 to a subscriber request.

1 10. The communication system according to claim 9, wherein the
2 received signals include a plurality of programs, the subscriber
3 request relates to ^{of} ~~at least one~~ the plurality of programs, and
4 the modification of the received signals by the program subsystem
5 in response to subscriber requests is the inclusion of an
6 authorization code in the transmission, the authorization code
7 corresponding to the subscriber request for a particular program.

1 11. The communications system according to claim 8, wherein the
2 program subsystem further comprises a video server system, the
3 video server system including at least one video server and
4 adapted to play at least one of a preselected set of videos, the
5 return path processor means being further adapted to receive
6 requests for transmission of one of the preselected set of videos
7 and to transmit to the program subsystem a message regarding
8 authorization for transmission to the subscriber of the one

9 preselected video, and the program subsystem processing means
10 being further adapted to include in the transmission an
11 authorization code corresponding to the subscriber and to the
12 selected video.

1 12. The communications system according to claim 8, wherein the
2 return path subsystem further comprises data storage means, and
3 wherein the return path subsystem processing means is further
4 adapted to create a record corresponding to communications
5 received from subscribers and to store that record in the data
6 storage means.

1 13. The communications system according to claim 12, wherein the
2 record corresponding to communications received from subscribers
3 contains billing information.

1 14. The communications system according to claim 12, wherein the
2 record corresponding to communications received from subscribers
3 contains subscriber preference information derived from the
4 subscriber communications.

1 15. A system for communicating content with a plurality of
2 subscribers, the content originating from a plurality of content
3 providers and transmitted by each content provider via receivable
4 signals, at least one of the plurality of subscribers having

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5 access to a telecommunications system, the system for
6 communicating content comprising:

7 a. a program subsystem, including:

8 i. a plurality of receivers, each receiver for
9 receiving one of the plurality of signals, each signal from one
10 of the plurality of content providers;

11 ii. processing means adapted for modifying the
12 received signals, the processing means coupled to the plurality
13 of receivers;

14 b. a transmission subsystem, including:

15 i. at least one means for digitizing the signals
16 from the plurality of content providers coupled to the receiving
17 means;

18 ii. at least one means for compressing the
19 digitized signals, coupled to the digitizing means;

20 iii. at least one multiplexer, for multiplexing
21 the digitized signals into at least one data stream, coupled to
22 the compression means;

23 iv. means for modulating the at least one digital
24 data stream, coupled to the multiplexing means;

25 v. RF upconverting means coupled to the
26 modulating means for channelizing the at least one modulated
27 multiplexed digital into the UHF band;

28 vi. at least one amplifier coupled to the RF
29 upconverting means for amplifying the at least one modulated,
30 channelized, multiplexed digital signal; and
31 vii. at least one antenna coupled to the at least
32 one amplifier for transmitting the at least one amplified,
33 channelized, modulated, digital signal;
34 c. a return path facility coupled to the program
35 subsystem and to the telecommunications system, including
36 processing means adapted for receiving over the
37 telecommunications system communications from the subscribers;
38 d. a plurality of intelligent control boxes, each
39 intelligent control box at a subscriber's premises, coupled to
40 the telecommunications system, and including:
41 i. a tuner for receiving transmissions from the
42 transmission subsystem;
43 ii. an input device for accepting subscriber
44 requests; and
45 iii. a processor coupled to the tuner and to the
46 input device and adapted to assert subscriber requests at the
47 return path ^{facility} ~~subsystem~~ via the telecommunications system;
48 whereby an aggregation of programming sources may be
49 provided point-to-multipoint by way of digital UHF broadcast, a
50 plurality of subscribers can assert requests in connection with
51 the broadcast, and the return path facility can fulfill the
52 requests.

1 16. A method for providing asymmetric data communications
2 services, comprising the steps of:
3 a. receiving signals from a plurality of content
4 providers;
5 b. digitizing the signals from the plurality of
6 content providers;
7 c. multiplexing the signals from the plurality of
8 content providers into at least one data stream;
9 d. modulating the at least one multiplexed, digital
10 data stream;
11 e. channelizing the at least one modulated,
12 multiplexed digital data stream into at least one digital RF
13 signal;
14 f. transmitting the at least one digital RF signal to
15 a plurality of subscribers each having a device for receiving and
16 demodulating the at least one RF signal; and
17 g. receiving over the PSTN a message from at least
18 one subscriber receiving device.

1 17. The method according to claim 16, further comprising the
2 step of modifying the transmitted signal in response to the
3 message from the at least one subscriber receiving device.

1 18. The method according to claim 17, wherein the modification
2 of the transmitted signal is the incorporation of at least one

3 authorization code corresponding to the at least one subscriber
4 receiving device.

1 19. The method according to claim 18, further comprising the
2 step of generating billing data in response to the message
3 received from the at least one subscriber receiving device.

1 20. The method according to claim 19, further comprising the
2 step of re-transmitting to other service providers each of the at
3 least one messages from the at least one subscriber receiving
4 device.

1 21. The method according to claim 20, wherein the resolution of
2 the service is approximately 256 by 240 pixels.

1 22. A device for permitting a subscriber to interact with an
2 asymmetrical data communications system, the device coupled and
3 the asymmetrical data communications system both coupled to a
4 telecommunications system, the device having a plurality of ports
5 each for receiving one of a plurality of signals, comprising:

6 a. an input selector coupled to the plurality of
7 ports and adapted for switching signals arriving at the plurality
8 of input ports according to a subscriber selection;

9 b. a plurality of receivers coupled to the input
10 selector each for receiving a selected signal switched by the
11 input selector, the plurality of receivers including:
12 i. a tuner for receiving digital RF
13 transmissions in the UHF band; and
14 ii. a tuner for receiving analog RF signals; and
15 c. a video decoder coupled to the digital tuner;
16 d. signal generation means coupled to the video
17 decoder;
18 e. an input device for subscriber information input;
19 f. a processor coupled to the input selector and the
20 video decoder adapted for reading subscriber input information
21 and actuating the input selector to effect subscriber requests;
22 and
23 f. a network interface coupled to the processor and
24 to the telecommunications system for transmitting subscriber
25 messages to the asymmetrical data communications system.

1 23. The device of claim 22, wherein the plurality of receivers
2 further comprises a DBS tuner coupled to the input selector.

1 24. The device of claim 22, wherein the plurality of receivers
2 further comprises an MMDS tuner coupled to the input selector.

- 1 25. The device of claim 22, wherein the plurality of receivers
2 further comprises an LMDS tuner coupled to the input selector.
- 1 26. The device of claim 23, wherein the plurality of receivers
2 further comprises an MMDS tuner coupled to the input selector.
- 1 27. The device of claim 23, wherein the plurality of receivers
2 further comprises an LMDS tuner coupled to the input selector.
- 1 28. The device of claim 24, wherein the plurality of receivers
2 further comprises an LMDS tuner coupled to the input selector.
- 1 29. The device of claim 26, wherein the plurality of receivers
2 further comprises an LMDS tuner coupled to the input selector.
- 1 30. The device of claim 22 further comprising a secure processor
2 subsystem coupled to the analog tuner for descrambling analog
3 input selector that requires descrambling.
- 1 31. The device of claim 30 further comprising an EIA-563
2 baseband interface coupled to the secure processor subsystem.

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